FlatSeal™ HMF EG

MEETING PHARMACEUTICAL, MEDICAL AND BIOTECH REQUIREMENTS



Specially engineered for use in medical, pharmaceutical and biotechnology applications, FlatSeal™ HMF EG is compliant with a wide range of industry-relevant standards and approvals.

Produced using medical grade Ethylene Propylene Diene Rubber (EPDM), FlatSeal™ HMF EG offers effective sealing of flanges for medical applications. To protect patients and ensure safe use in biopharmaceutical and medical devices, it meets biocompatibility requirements according US Pharmacopeia (USP) 88 Class VI, USP 87 and ISO 10993-5.

EPDM polymers are fully saturated, non-polar, hydrocarbon based elastomers. Their polymer geometry gives FlatSeal™ HMF EG wide-ranging chemical compatibility, making it suitable for contact with alkaline cleaning fluids and offering long life in polar solvents, hot water and steam.

In addition, FlatSeal™ HMF EG is peroxide cured and contains a very low amount of softeners and process aids. This reduces potential leach out to a minimum, lowering the risk of contamination.

Applications

- Tanks
- Vessels
- Bio reactors
- Pipe flanges
- Autoclaves

Features and benefits

- Operating temperatures from -45 °C to +150 °C / -49 °F to +300 °F
- Exceptional mechanical performance
- High wear resistance, minimal creep and permeation
- Minimal risk of contamination from leach out of softeners and process aids
- Long life in polar solvents, hot water and steam
- Suitable for contact with alkaline cleaning fluids
- Cost-effective sealing of flanges in medical applications
- Single material used for O-Rings, molded parts and flat gaskets
- Compliant with FDA CFR §177.2600, USP 88 Class VI, USP 87, ISO 10993-5, 3-A, NSF, KTW, WRAS

Ensuring the highest quality every step of the way

Using a state-of-the-art production process, HMF FlatSeal™ gaskets are manufactured with the highest quality raw materials. Every batch of material must match precise specifications and is subjected to rigorous inspection to ensure that only approved raw materials are used in production.

To guarantee consistent high quality at all steps, a process control system monitors and controls the preparation of formulations, their blending operation, and the calendaring process that forms the material sheet from which a FlatSeal™ is formed.

TECHNICAL INFORMATION ABOUT FLATSEAL™ HMF EG

General data	
Elements	Pure EPDM with USP Class VI (E7581/HMFEG)
Approvals	ACS, ADI-free, BAM, FDA, EC 1935/2004, USP Chapter 87 & 88, W270, WRAS
Color	Black
Thickness	2.00 mm / 0.08 inch; Further thicknesses available on request

Material Properties	Standard	Unit	Values
Hardness	DIN ISO 7619-1	Shore A	70 ±5
Density	DIN EN ISO 1183-1	g/cm³	1.15 ±0.02
Modulus 100%	DIN 53 504	MPa	4.8
Temperature Range		°C °F	-45 to +149 -49 to +300
Tensile strength		MPa	≥10
Elongation at break		%	≥125
Compression set (24h at +150 °C / +302 °F)	DIN ISO 8150-1 A	%	11

Physical properties Gasket thickness 2.0 mm	Standard	Unit	Measured Values		
			Air 72h at +150 °C / +300 °F DIN 53 508	**Water** 72h at +100 °C / +212 °F DIN ISO 1817	**Steam** 72h at +100 °C / +212 °F DIN ISO 1917
Change of hardness	DIN ISO 7619-1	Shore A	4	0	-1
Tensile strength	DIN 53 505	MPa	13.2	15.1	15.8
Change of tensile strength	DIN EN ISO 1183-1	%	-19	-7	-2
Elongation at break	DIN 53 504	%	146	181	192
Change of elongation at break	DIN 53 504	%	-26	-8	-2
Change of weight	DIN 53 504	%	-1	1	1
Change of volume	DIN 53 512 (6 mm)	%		1	1

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